FIG. 1

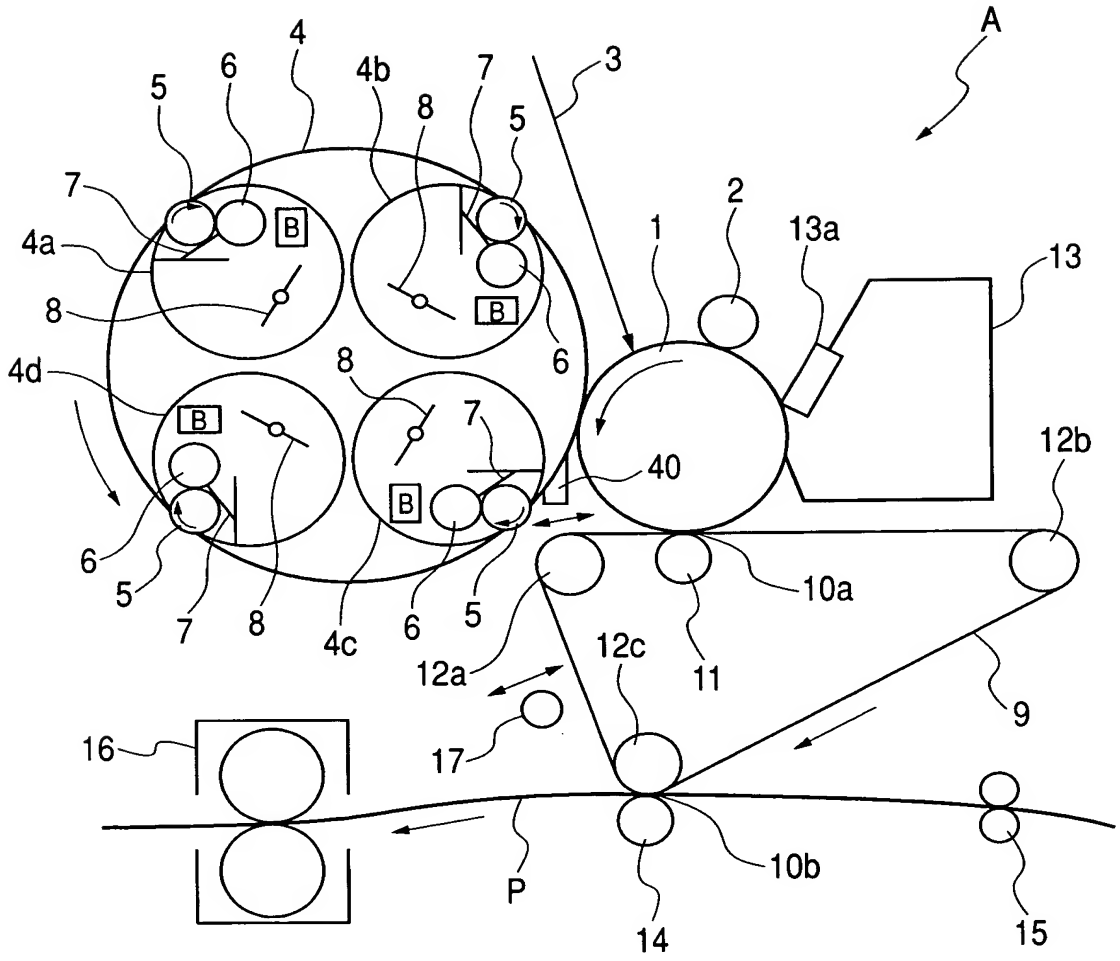

A
4
6
5
4b
7
8
3
5
7
4a
8
B
B
6
1
2
13a
13
4d
8
B
7
40
12b
6
5
7
8
4c
6
5
12a
10a
11
12c
9
16
17
P
10b
14
15

FIG. 2

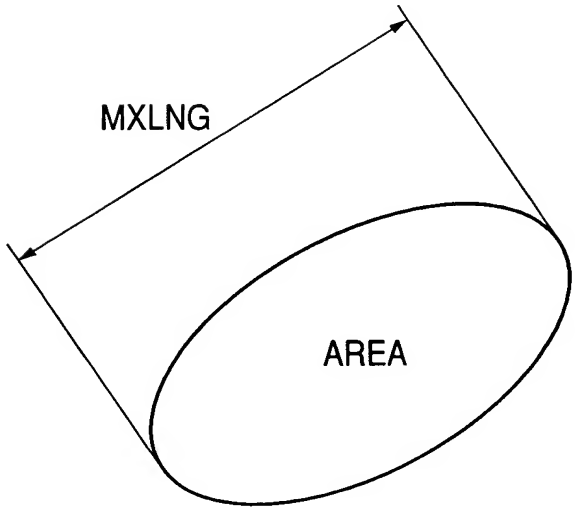


FIG. 3

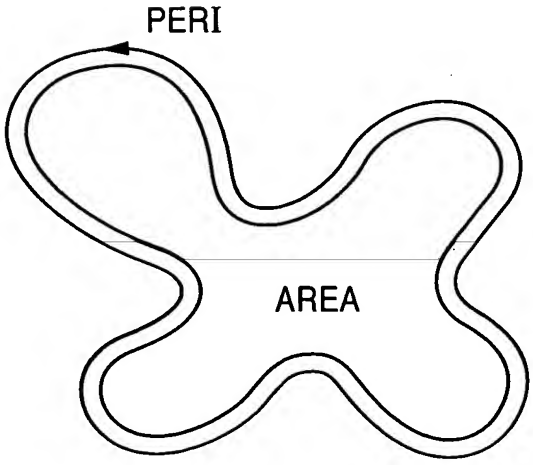


FIG. 4

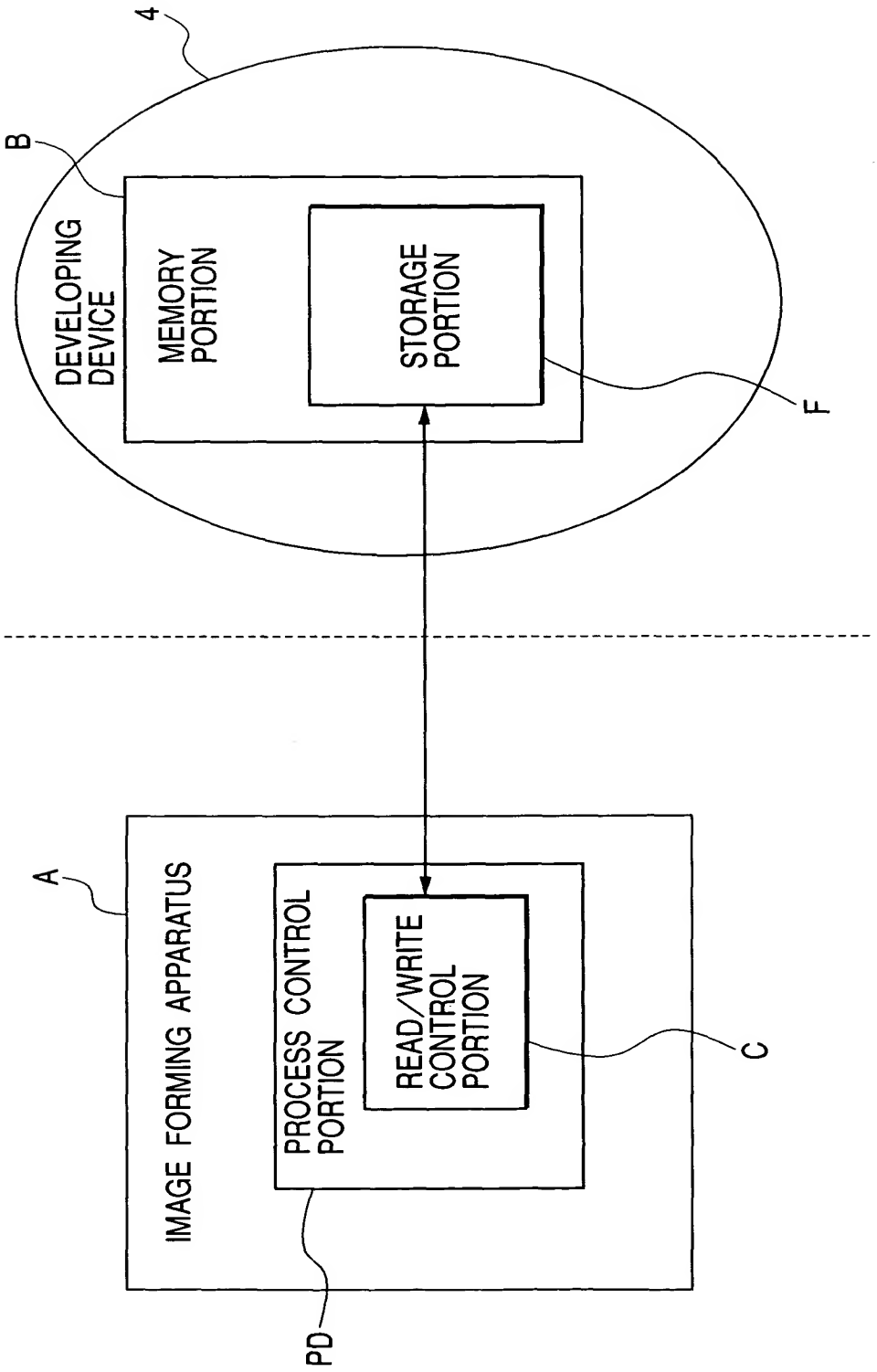

4
B
DEVELOPING DEVICE
MEMORY PORTION
STORAGE PORTION
F
A
IMAGE FORMING APPARATUS
PROCESS CONTROL PORTION
READ/WRITE CONTROL PORTION
C
PD

FIG. 5

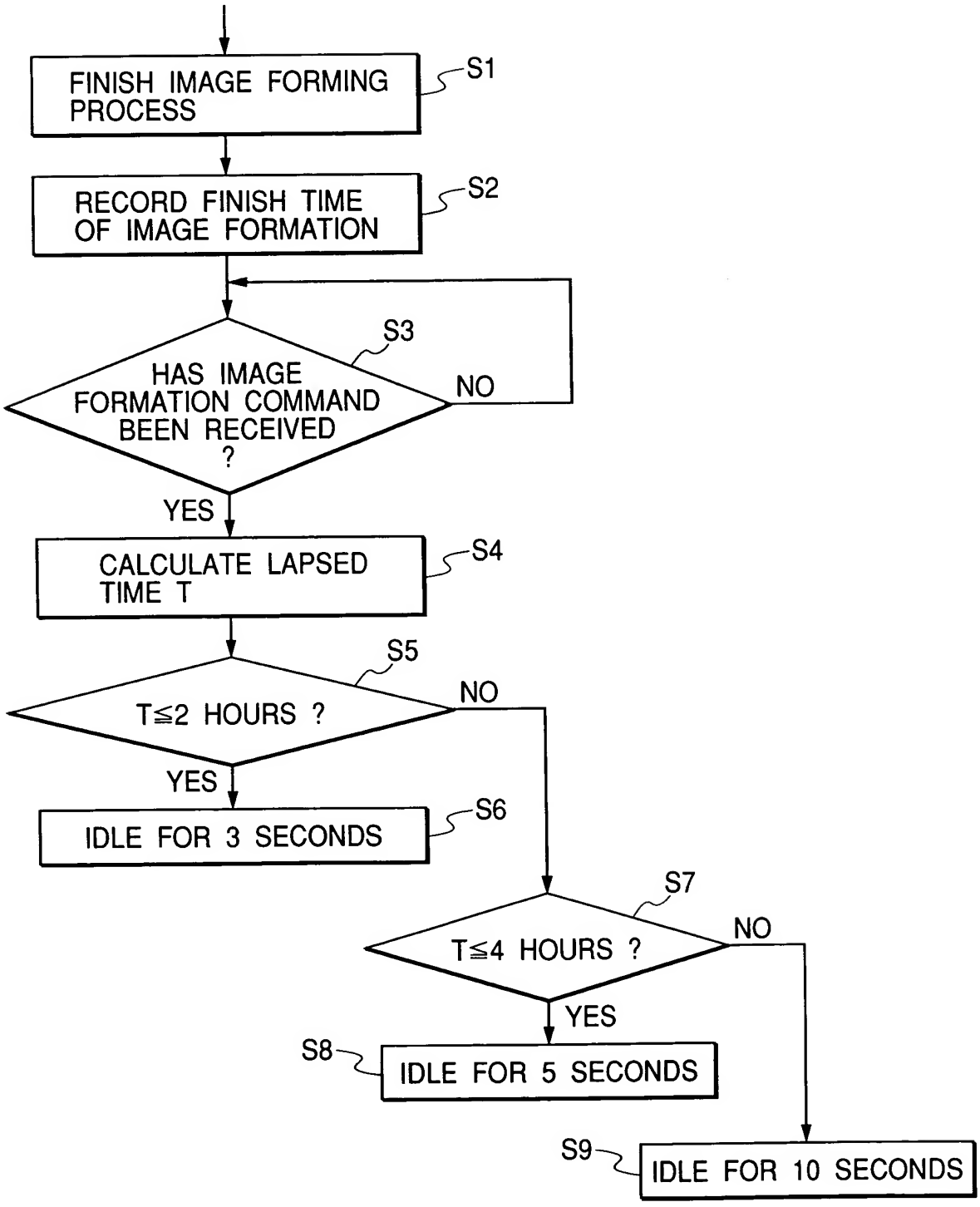

FINISH IMAGE FORMING PROCESS
S1
RECORD FINISH TIME OF IMAGE FORMATION
S2
S3
HAS IMAGE FORMATION COMMAND BEEN RECEIVED ?
NO
YES
CALCULATE LAPSED TIME T
S4
S5
T≦2 HOURS ?
NO
YES
IDLE FOR 3 SECONDS
S6
S7
T≦4 HOURS ?
NO
YES
S8
IDLE FOR 5 SECONDS
S9
IDLE FOR 10 SECONDS

FIG. 6

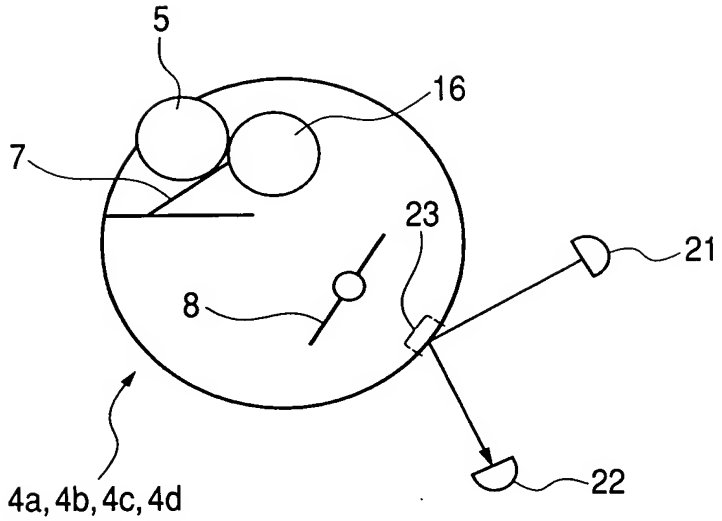


FIG. 7A

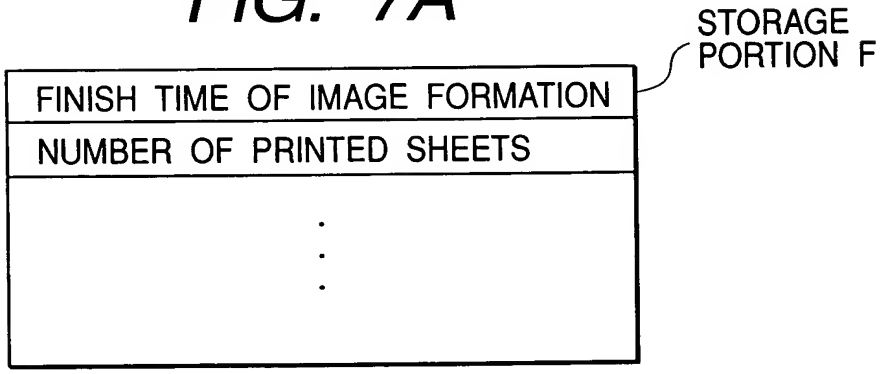


FIG. 7B

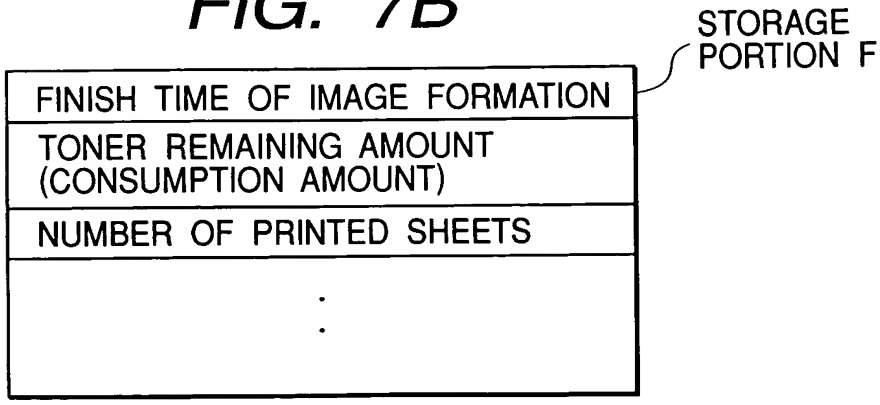


FIG. 8

FIG. 8A
FIG. 8B

FIG. 8A

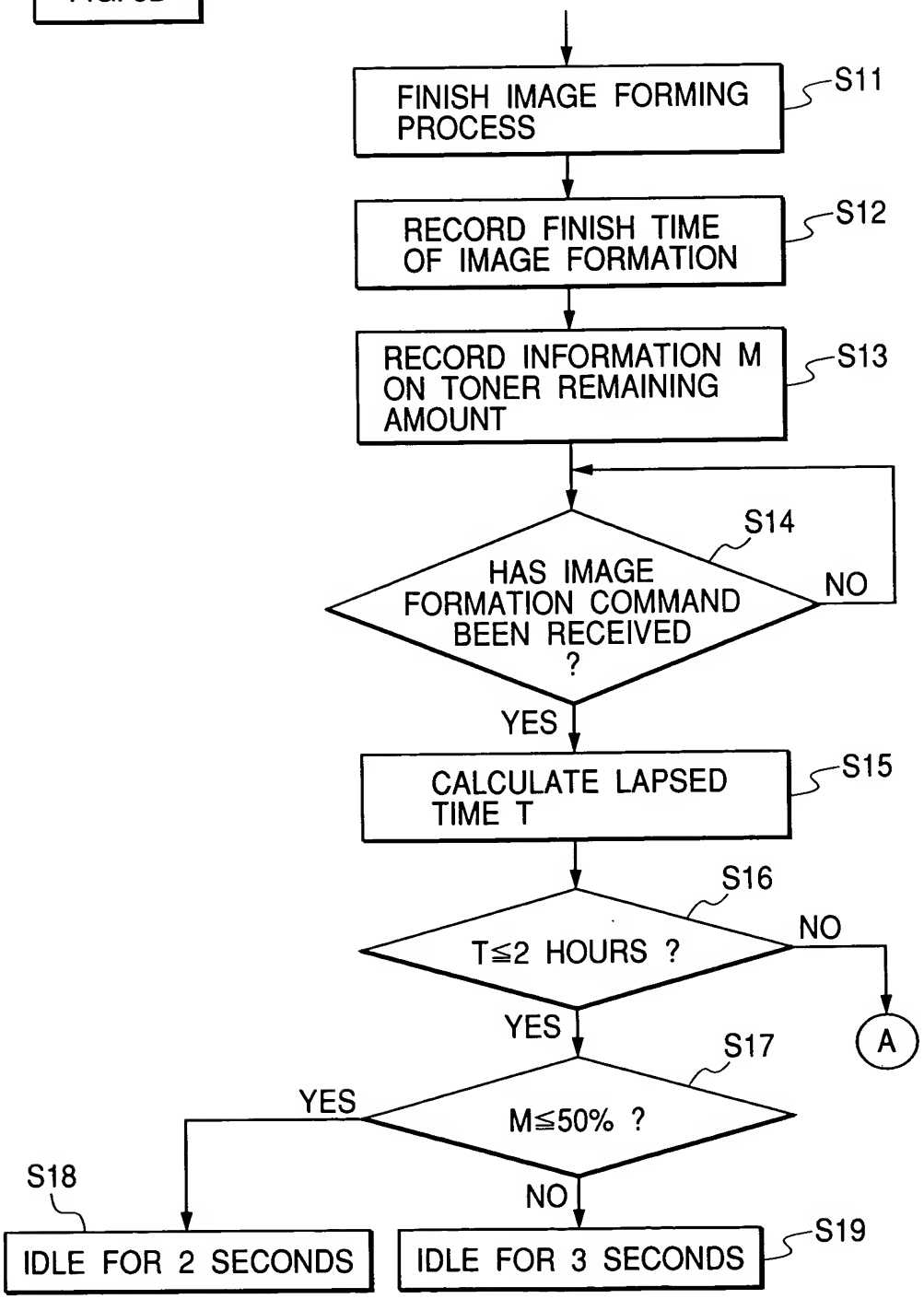


FIG. 8B

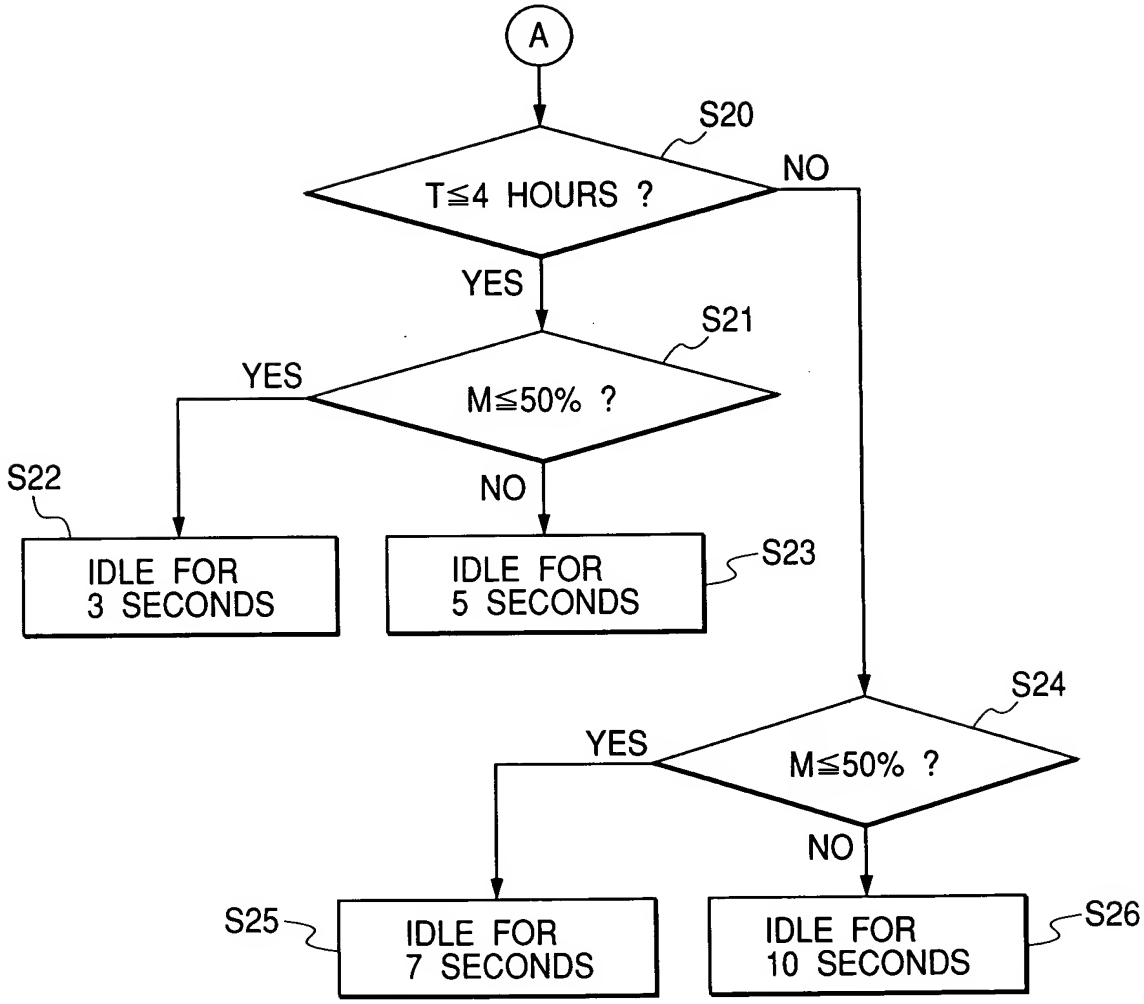

A
S20
T≦4 HOURS ?
NO
YES
S21
M≦50% ?
YES
NO
S22
IDLE FOR
3 SECONDS
IDLE FOR
5 SECONDS
S23
S24
M≦50% ?
YES
NO
S25
IDLE FOR
7 SECONDS
IDLE FOR
10 SECONDS
S26

FIG. 9

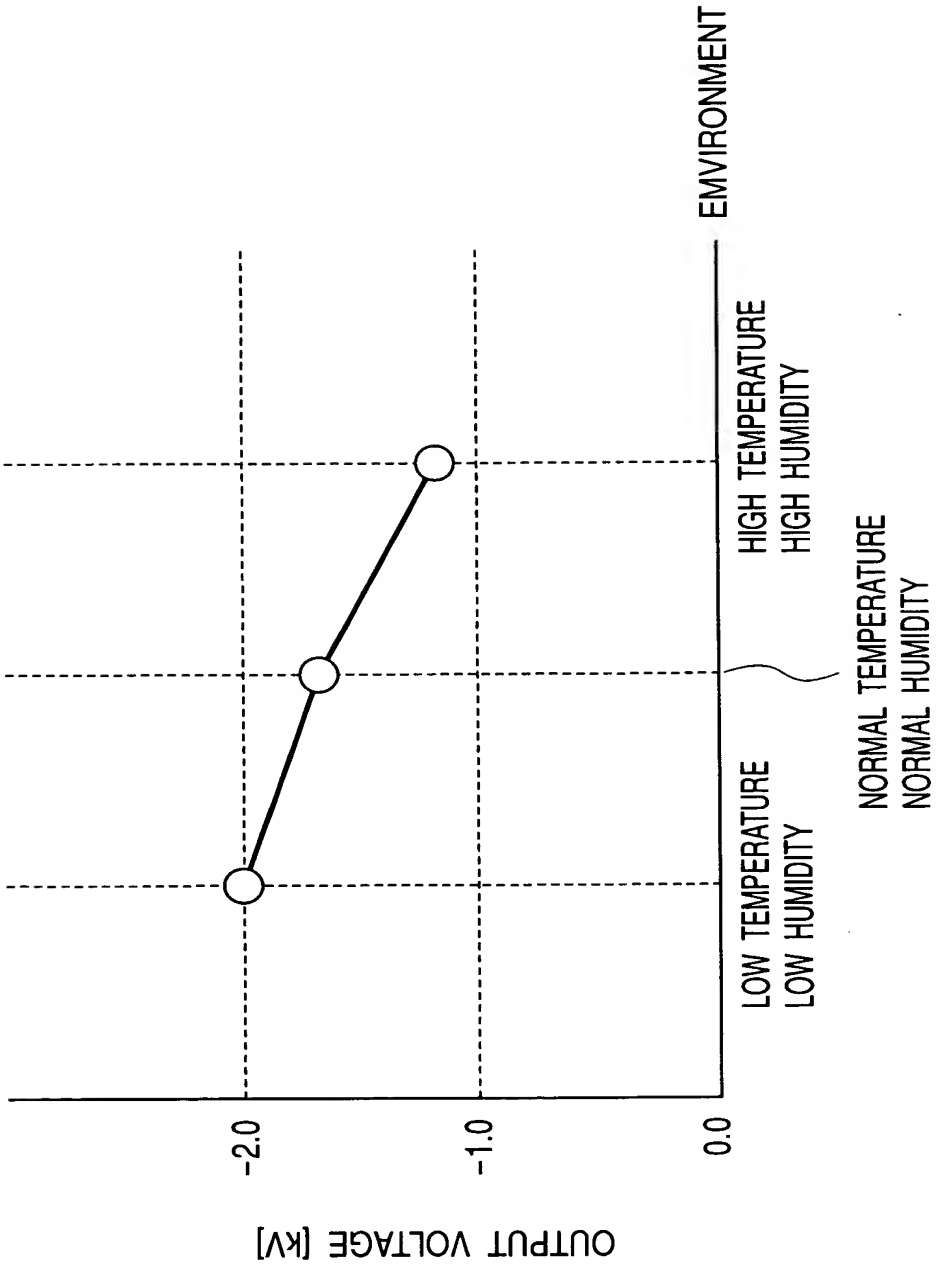

OUTPUT VOLTAGE [kV]
-2.0
-1.0
0.0
EMVIRONMENT
LOW TEMPERATURE
LOW HUMIDITY
NORMAL TEMPERATURE
NORMAL HUMIDITY
HIGH TEMPERATURE
HIGH HUMIDITY

FIG. 10

FIG. 10A
FIG. 10B

FIG. 10A

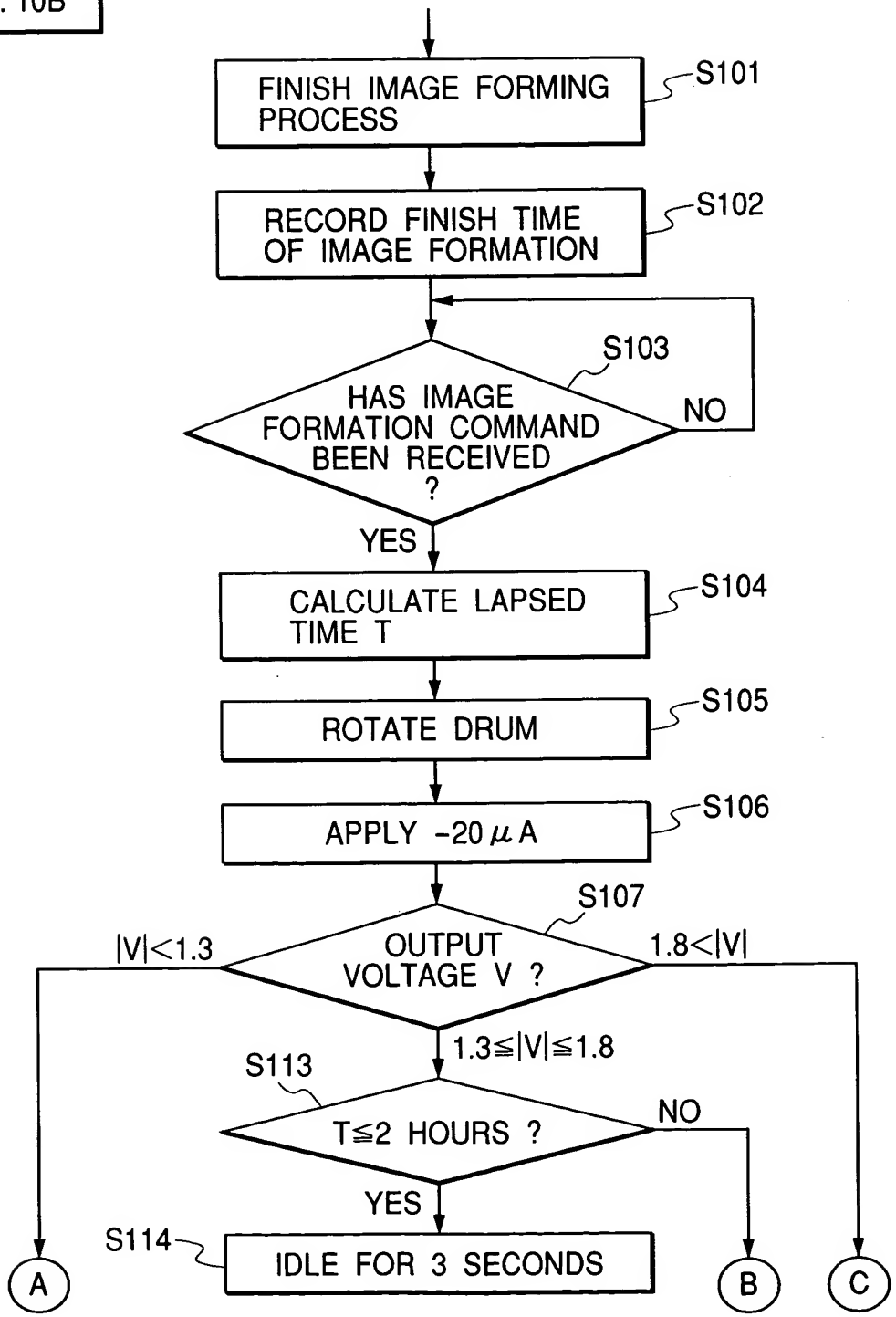


FIG. 10B

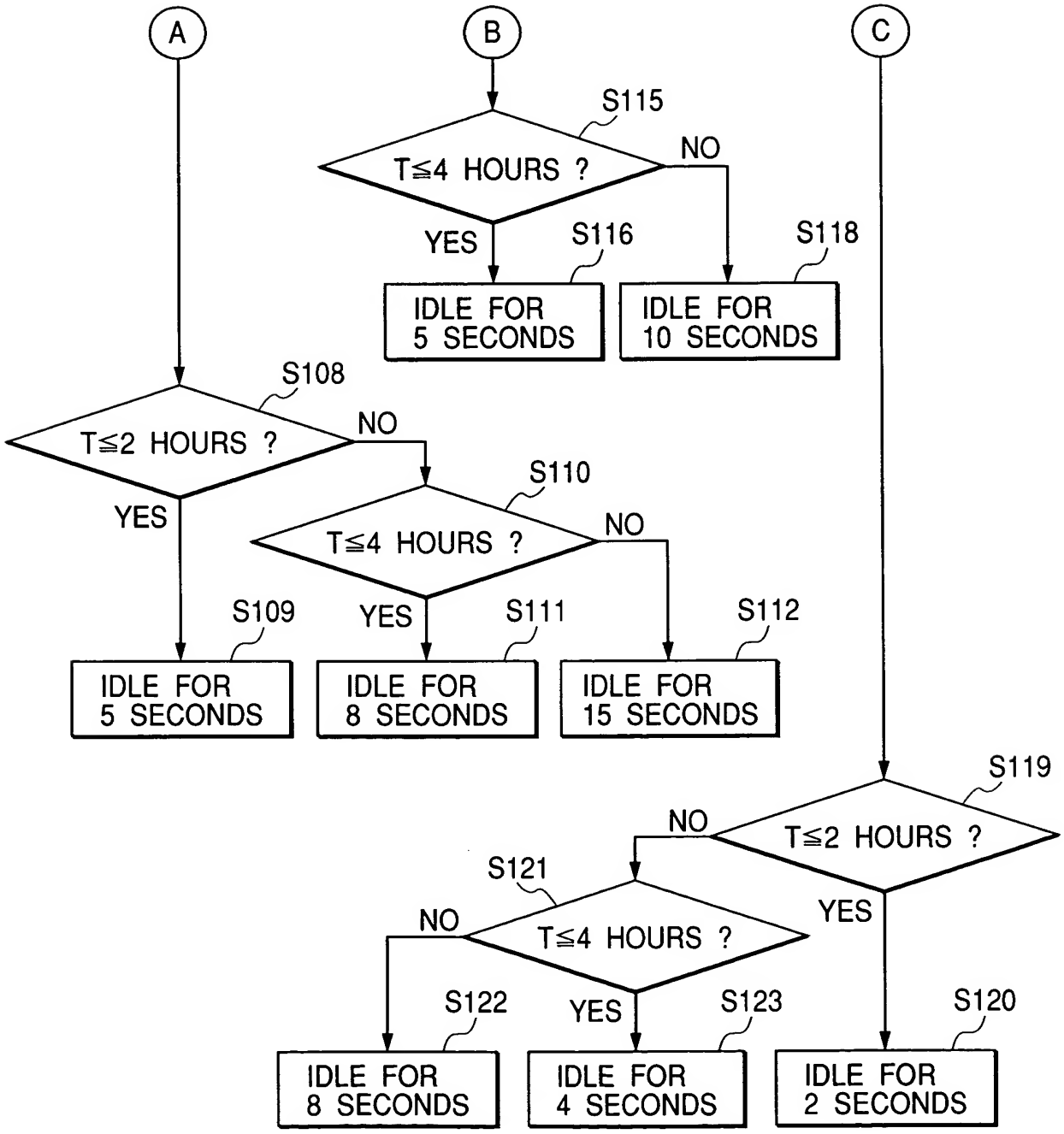

A
B
C
S115
T≦4 HOURS ?
NO
YES
S116
S118
IDLE FOR 5 SECONDS
IDLE FOR 10 SECONDS
S108
T≦2 HOURS ?
NO
YES
S110
T≦4 HOURS ?
NO
YES
S109
S111
S112
IDLE FOR 5 SECONDS
IDLE FOR 8 SECONDS
IDLE FOR 15 SECONDS
S119
NO
T≦2 HOURS ?
S121
NO
T≦4 HOURS ?
YES
S122
YES
S123
S120
IDLE FOR 8 SECONDS
IDLE FOR 4 SECONDS
IDLE FOR 2 SECONDS

FIG. 11

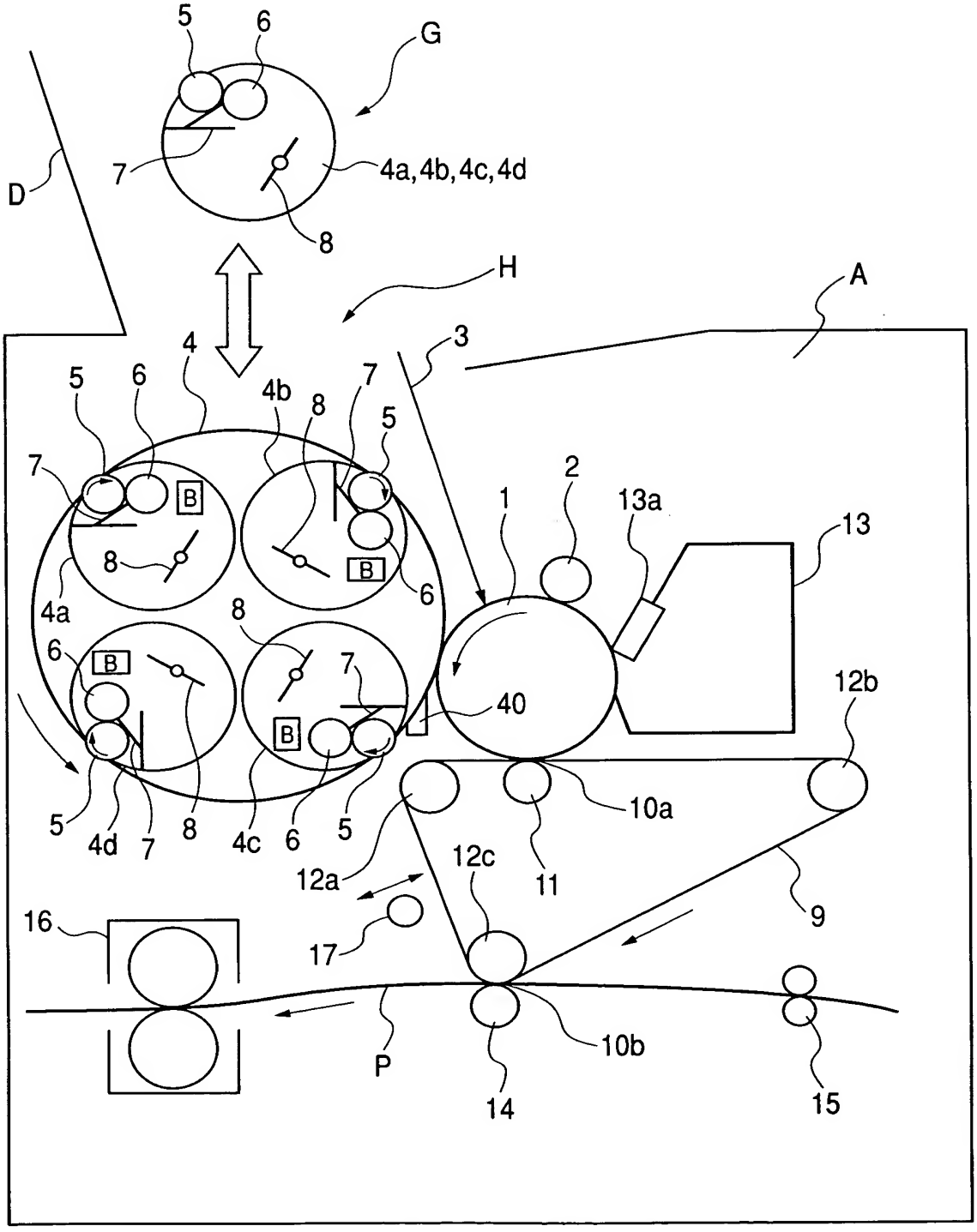

5
6
G
D
7
4a,4b,4c,4d
8
H
A
3
4
4b
5
6
7
8
B
4a
1
2
13a
13
40
12b
10a
11
12c
12a
9
17
16
P
10b
14
15
4d
4c

FIG. 12

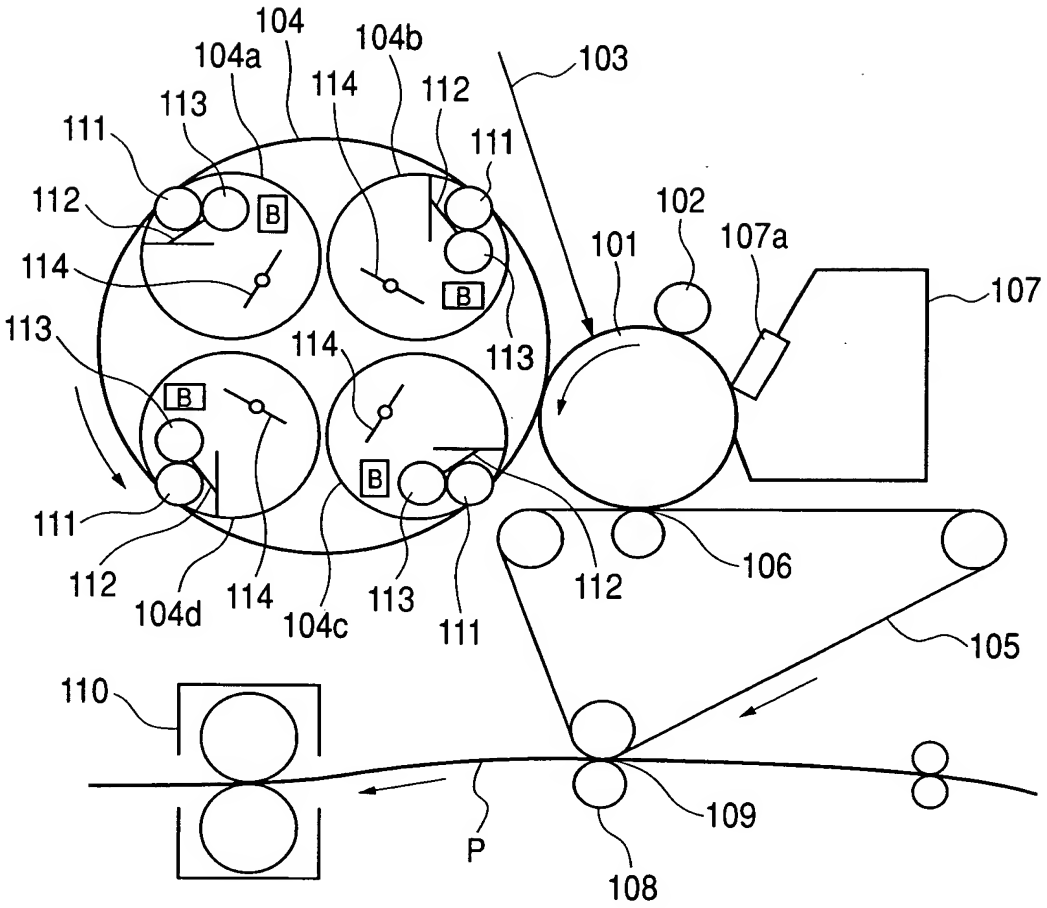

104
104a
104b
103
113
114
112
111
111
112
B
102
101
107a
107
114
B
113
113
114
B
111
112
104d
114
104c
113
111
112
106
105
110
P
109
108

FIG. 13

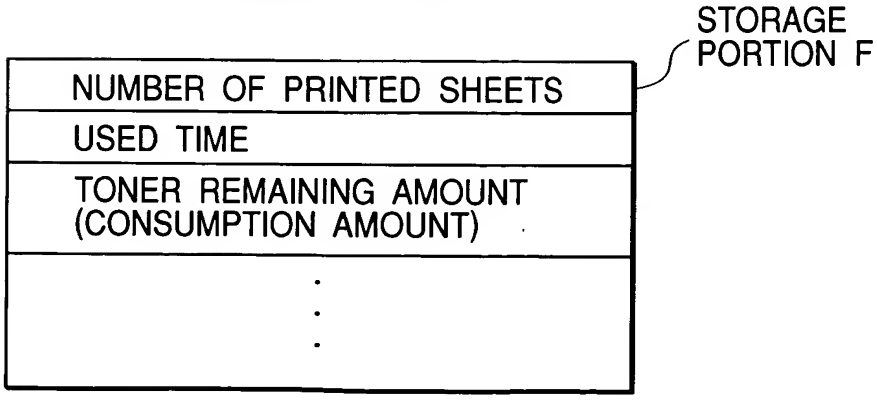

STORAGE PORTION F
NUMBER OF PRINTED SHEETS
USED TIME
TONER REMAINING AMOUNT (CONSUMPTION AMOUNT)

FIG. 14

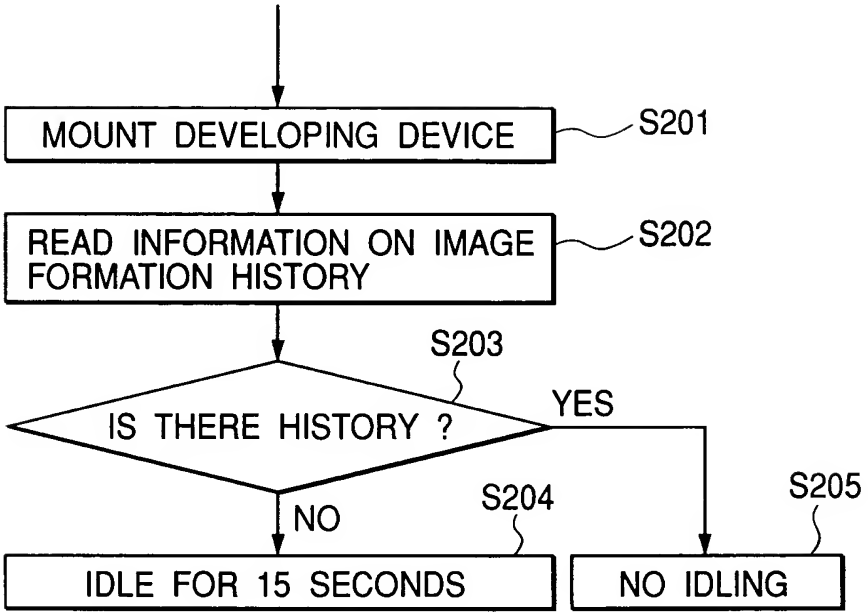

MOUNT DEVELOPING DEVICE
S201
READ INFORMATION ON IMAGE FORMATION HISTORY
S202
S203
IS THERE HISTORY ?
YES
NO
S204
S205
IDLE FOR 15 SECONDS
NO IDLING

FIG. 15

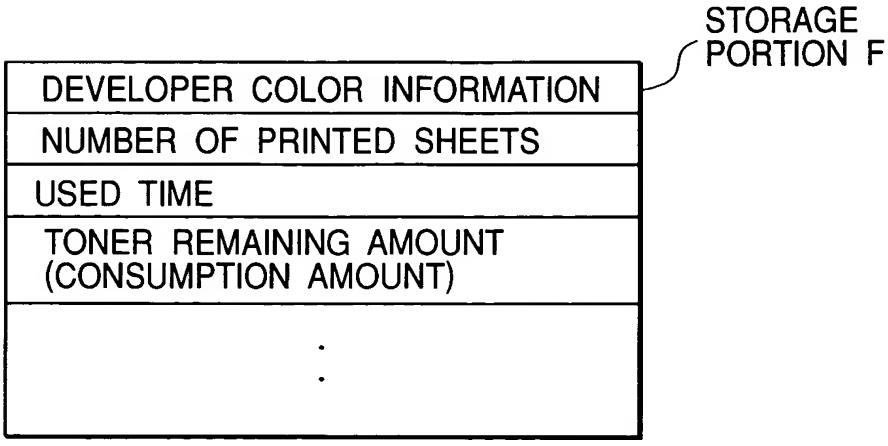

STORAGE PORTION F
DEVELOPER COLOR INFORMATION
NUMBER OF PRINTED SHEETS
USED TIME
TONER REMAINING AMOUNT (CONSUMPTION AMOUNT)

FIG. 16

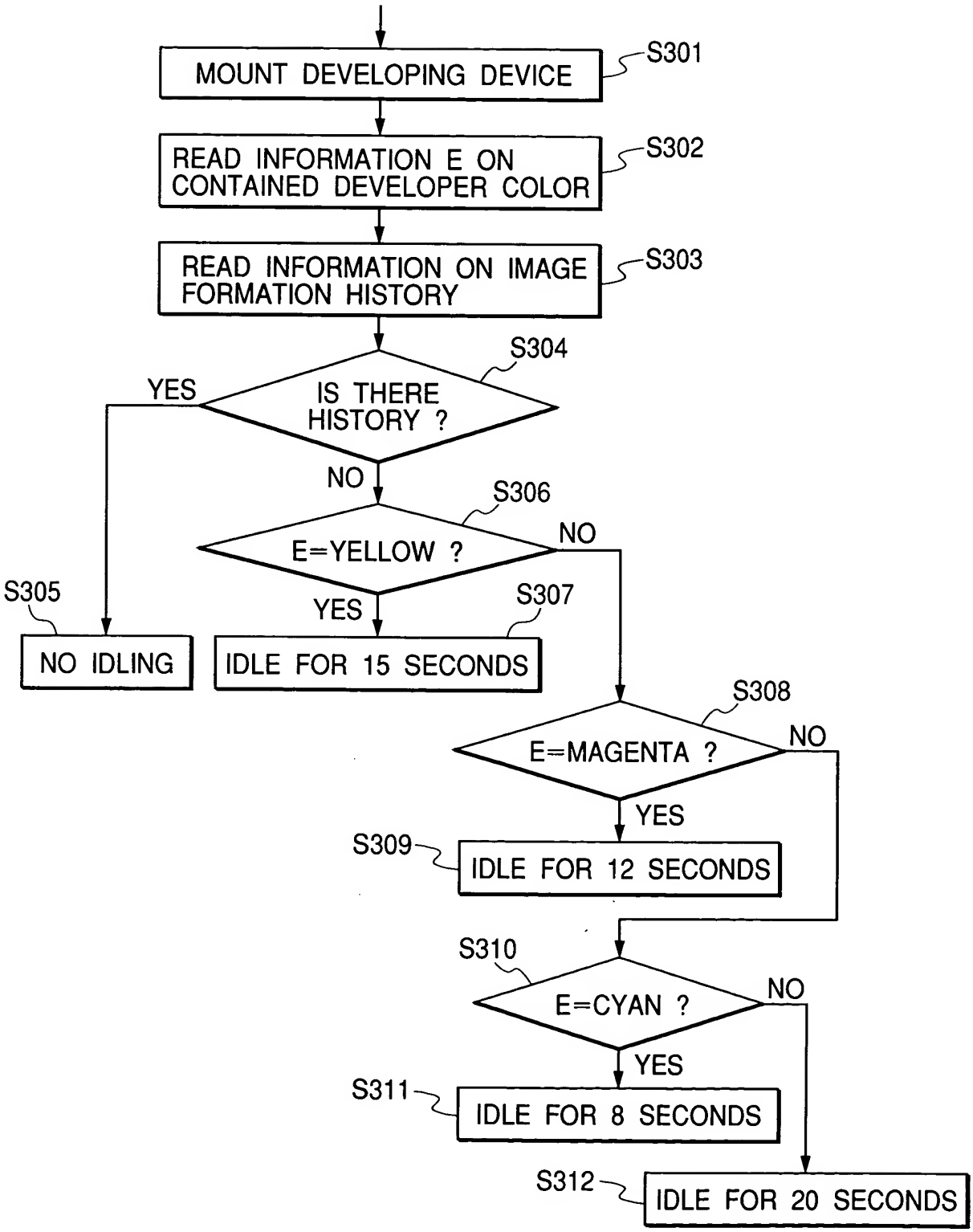

MOUNT DEVELOPING DEVICE
S301
READ INFORMATION E ON CONTAINED DEVELOPER COLOR
S302
READ INFORMATION ON IMAGE FORMATION HISTORY
S303
S304
IS THERE HISTORY ?
YES
NO
S306
E=YELLOW ?
NO
YES
S305
S307
NO IDLING
IDLE FOR 15 SECONDS
S308
E=MAGENTA ?
NO
YES
S309
IDLE FOR 12 SECONDS
S310
E=CYAN ?
NO
YES
S311
IDLE FOR 8 SECONDS
S312
IDLE FOR 20 SECONDS

FIG. 17

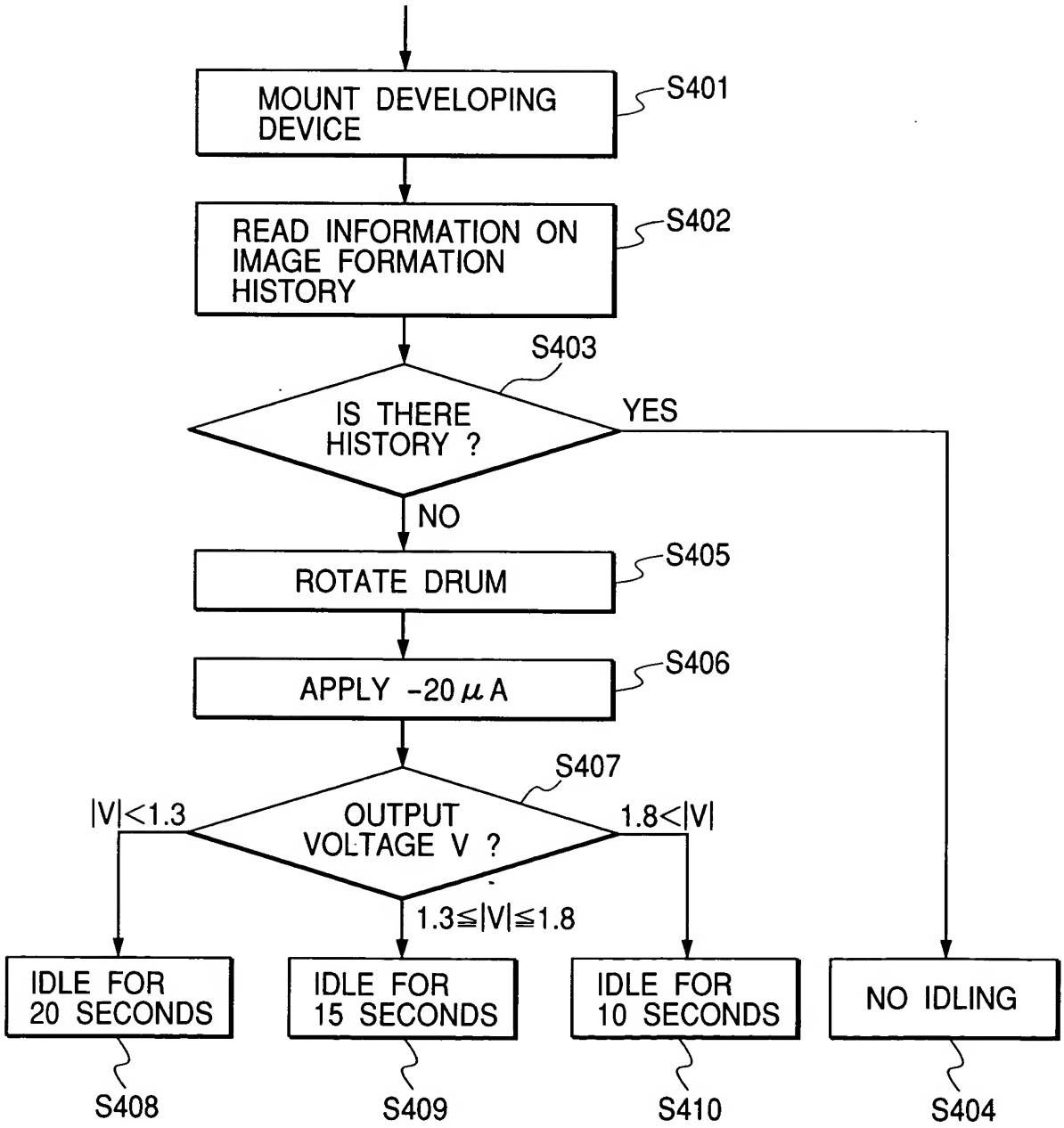
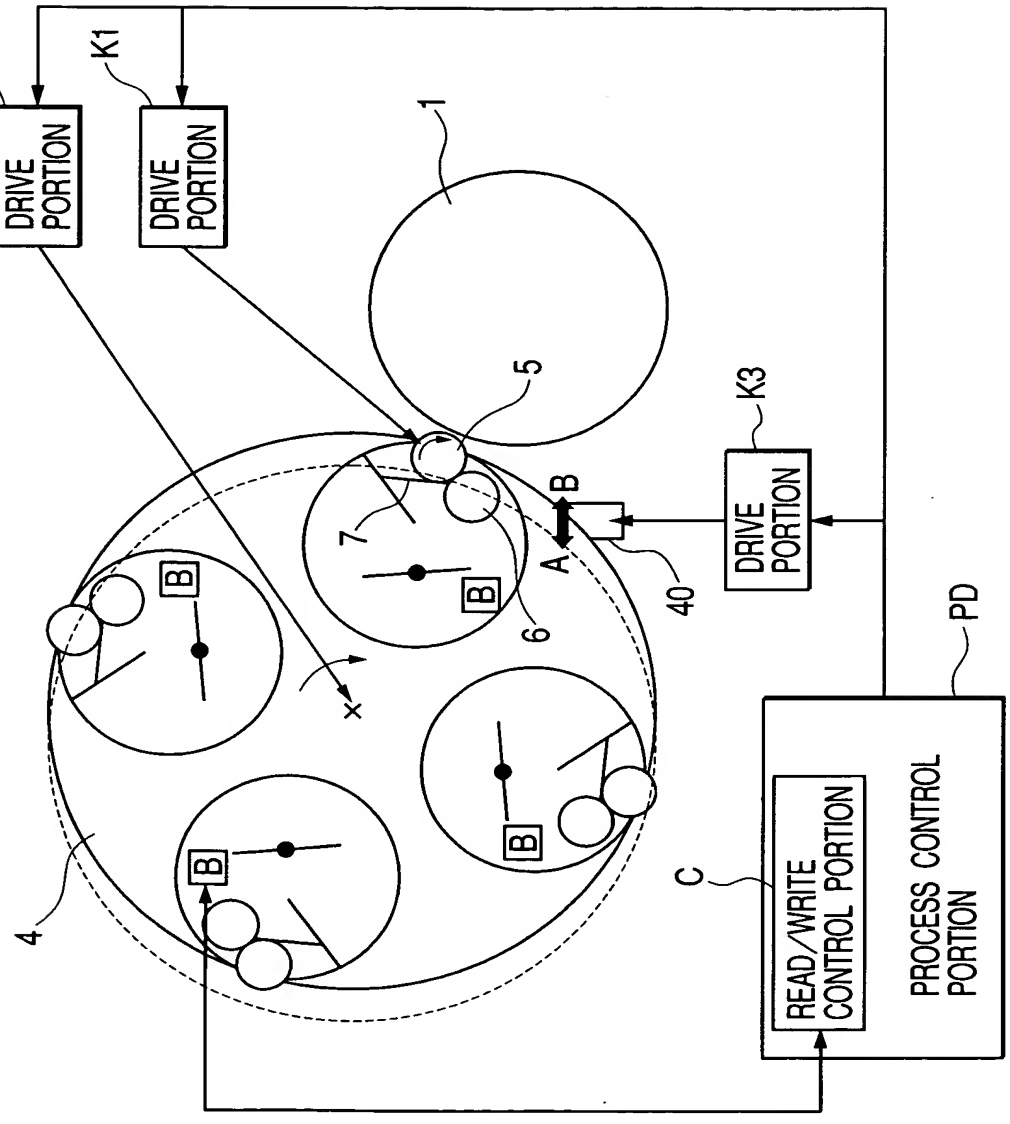

MOUNT DEVELOPING DEVICE
S401
READ INFORMATION ON IMAGE FORMATION HISTORY
S402
S403
IS THERE HISTORY ?
YES
NO
ROTATE DRUM
S405
APPLY -20 μA
S406
S407
OUTPUT VOLTAGE V ?
|V|<1.3
1.8<|V|
1.3≦|V|≦1.8
IDLE FOR 20 SECONDS
IDLE FOR 15 SECONDS
IDLE FOR 10 SECONDS
NO IDLING
S408
S409
S410
S404

FIG. 18


K2
K1
DRIVE PORTION
DRIVE PORTION
1
5
K3
DRIVE PORTION
B
A
7
6
40
4
X
B
B
B
B
C
READ/WRITE CONTROL PORTION
PROCESS CONTROL PORTION
PD